

# C BETA-BISABOLENE

Chemid

BETABISABOLENE

\*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Alpinia galanga	Leaf	--	305	-0.09668384915000608	--
Alpinia galanga	Rhizome	2	7775	1	--
Alpinia galanga	Leaf Essent. Oil	--	5700	-0.9926246807613248	--
Alpinia galanga	Rhizome Essent. Oil	--	5700	-1	--
Angelica archangelica	Root	8	72	-1.2022170084503725	--
Angelica archangelica	Root Essent. Oil	--	--	--	--
Artemesia capillaris	Essential Oil	--	--	--	--
Artemesia herba-alba	Plant	--	--	--	--
Cannabis sativa	Flower Essent. Oil	--	--	--	--
Cannabis sativa	Leaf Essent. Oil	--	--	--	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Cannabis sativa	Plant	--	--		Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. <i>J Natural Products</i> , 43: 169-234.
Centella asiatica	Shoot	--	--		Jim Duke's personal files.
Chamaemelum nobile	Plant	--	--		--
Citrus aurantiifolia	Fruit	90	90	-0.8555004504472944	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Citrus limon	Essential Oil	23	400	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Citrus limon	Leaf Essent. Oil	--	8000	-0.45226094922261545	Jim Duke's personal files.
Citrus limon	Petiole	--	25		--
Citrus paradisi	Pericarp	--	--		--
Coleus barbatus	Root Essent. Oil	--	13000	-0.42853564535296584	Jim Duke's personal files.
Copaifera spp	Gum	--	--		--
Coridotherymus capitatus	Shoot	44	44	-0.4702159665331807	Lagouri, V., Blekas, G., Tsimidou, M., Kokkini, S., and Boskou, D. 1993. Composition and Antioxidant Activity of Essential Oils from Oregano Plants Grown Wild in Greece. <i>Z. Lebensm Unters Forsch</i> 197: 20-23.
Cuminum cyminum	Fruit	60	360	-0.6279289020524476	--
Cuminum cyminum	Seed	60	360	-0.5964358465216921	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Curcuma longa	Rhizome	--	--		--
Daucus carota	Root	116	116	-0.04387653315512357	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Daucus carota	Seed	100	3500	1.4087125025983431	--
Daucus carota	Shoot	38	38	-0.48536297946072016	--
Illicium verum	Fruit	1	75	-0.8681433142470081	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Lantana camara	Shoot	--	32	-0.5005099923882596	--
Laurus nobilis	Leaf	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Lavandula latifolia	Plant	1	15	-0.6009687641555104	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Lavandula x hybrida	Shoot	20	42	-0.4752649708423605	Tucker, A.O., Maciarello, M.J., Angell, S., Espaillat, J.R., and French, E.C. 1993. The Essential Oil of Lavandula x hybrida Balb. ex Ging., a Distinct Hybrid from L. x heterophylla Poir. (Labiatae). J. Ess. Oil Res. 5: 443-445.
Lindera benzoin	Leaf	--	11	-0.4169621115203249	--
Litsea glaucescens	Shoot	3	20	-0.5308040182433384	Tucker, et al, EB46(1):21-24.1992
Murraya koenigii	Leaf	--	0	-0.4289453118130919	--
Myristica fragrans	Essential Oil	--	--		--
Myrrhis odorata	Leaf	Essent. Oil	--	17000	1.662205826363639
Myrtus communis	Plant	0	1	-0.6535148941588209	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Nepeta racemosa	Shoot	9	9	-0.5585735419438274	Baser, K.H.C., Ozek, T., Akgul, A. and Tumen, G. 1993. Composition of the Essential Oil of Nepeta racemosa Lam. J. Ess. Oil Res. 5: 215-7.
Nepeta racemosa	Shoot	--	9	-0.5585735419438274	Baser, K.H.C., Ozek, T., Akgul, A. and Tumen, G. 1993. Composition of the Essential Oil of Nepeta racemosa Lam. J. Ess. Oil Res. 5: 215-7.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Ocimum basilicum	Plant	6.5	6.5	-0.6328717716575204	Die Nahrung. Pino, J., Rosado, A., Goire, I., Roncal, E., and Garcia, I. 1993. Analysis of the Essential Oil from Cuban Basil. Die Nahrung 37:(5): 501-504.
Ocimum basilicum	Plant	--	6.5	-0.6328717716575204	Die Nahrung. Pino, J., Rosado, A., Goire, I., Roncal, E., and Garcia, I. 1993. Analysis of the Essential Oil from Cuban Basil. Die Nahrung 37:(5): 501-504.
Ocimum basilicum	Shoot Essent. Oil	--	2600	1	--
Ocimum suave	Shoot	205	205	-0.06377111964420612	J. Nat. Prod. 44: 308.
Ocimum tenuiflorum	Leaf	0	2970	2.806518767234007	--
Origanum onites	Plant	246	246	0.2660423808991146	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Origanum onites	Shoot	1415	1415	2.990876487409579	Biondi, D., Cianci, P., Geraci, C. and Ruberto, G. 1993. Antimicrobial Activity and Chemical Composition of Essential Oils from Sicilian Aromatic Plants. Flav. & Frag. J. 8: 331-7.
Origanum onites	Shoot	--	1415	2.990876487409579	Biondi, D., Cianci, P., Geraci, C. and Ruberto, G. 1993. Antimicrobial Activity and Chemical Composition of Essential Oils from Sicilian Aromatic Plants. Flav. & Frag. J. 8: 331-7.
Origanum vulgare	Plant	20	20	-0.582202289154328	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four <i>Origanum vulgare</i> Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
Origanum vulgare	Shoot	270	270	0.10032152040413772	Lagouri, V., Blekas, G., Tsimidou, M., Kokkini, S., and Boskou, D. 1993. Composition and Antioxidant Activity of Essential Oils from Oregano Plants Grown Wild in Greece. Z. Lebensm Unters Forsch 197: 20-23.
Origanum vulgare	Plant	200	200	0.09339081088823689	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four <i>Origanum vulgare</i> Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Origanum vulgare	Plant	80	80	-0.3570045891401397	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four <i>Origanum vulgare</i> Subspecies of Anatolian Origin. <i>J. Ess. Oil Res.</i> , 5: 425-431.
Origanum vulgare	Plant	45	45	-0.4883699141484162	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four <i>Origanum vulgare</i> Subspecies of Anatolian Origin. <i>J. Ess. Oil Res.</i> , 5: 425-431.
Origanum vulgare	Plant	3	640	1.7448406109922843	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Origanum vulgare	Essential Oil	--	38100	1	--
Origanum vulgare	Shoot Essent. Oil	--	1500	-1	--
Panax ginseng	Root Essent. Oil	--	--	--	--
Panax ginseng	Plant	--	--	--	--
Panax quinquefolius	Root Essent. Oil	6251	58670	1.706312778237975	--
Pastinaca sativa	Root	--	--	--	--
Pelargonium graveolens	Essential Oil	--	--	--	--
Petasites hybridus	Rhizome	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Petroselinum crispum	Leaf	2.76	2.76	-0.4259386179214522	--
Petroselinum crispum	Seed	22	22	-0.8122766560766513	--
Pimpinella anisum	Plant	--	--	--	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Pimpinella anisum	Essential Oil	--	--	--	--
Pimpinella anisum	Tissue Culture	--	--	--	--
Piper auritum	Leaf	--	--	--	Tramil
Piper cubeba	Fruit	1500	3000	1.5972151266971657	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Piper cubeba	Fruit Essent. Oil	20000	20000	-1	--
Piper nigrum	Fruit	--	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Piper nigrum	Fruit Essent. Oil	21200	111600	1	--
Plectranthus barbatus	Root Essent. Oil	--	13000	-0.42853564535296584	--
Plectranthus incanus	Shoot	30	30	-0.5055589966974394	Shah, G.C., Bhandari, R. & Mathela, C.S. 1992. 1,2-Epoxy-p-Menthane Derivatives from some Labiateae Species. J. Ess. Oil Res. 4: 57-59.
Psidium guajava	Fruit	--	2000	0.7543575400495849	--
Psidium guajava	Pericarp Essent. Oil	--	--	--	--
Ptychopetalum olacoides	Root Essent. Oil	--	4000	-0.8492414875320435	Uber Bucek, E., Fournier, G., Dadoun, H. 1987. Volatile Constituents of Ptychopetalum olacoides Root Oil. Planta Med. 53, 2: 231.
Satureja cilicica	Shoot	60	60	-0.42982393205974223	Tumen, G. Baser, K.H.C. and Kirimer, N. 1993. The Essential Oil of Satureja cilicica P.H. Davis. J. Ess. Oil Res. 5: 547-548.
Satureja montana	Plant	20	400	0.8440498109355312	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Satureja thymbra	Shoot	0	0	-0.5812940613351365	Lagouri, V., Blekas, G., Tsimidou, M., Kokkini, S., and Boskou, D. 1993. Composition and Antioxidant Activity of Essential Oils from Oregano Plants Grown Wild in Greece. Z. Lebensm Unters Forsch 197: 20-23.
Scutellaria parvula	Plant	54	54	-0.454590259146288	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Sideritis germanicolpitana	Plant	17	41	-0.5033830941493621	J. Essential Oil, 4: 533.
Tagetes lucida	Shoot	--	30	-0.5055589966974394	Bicchi, C., Fresia, M., Rubiolo, P., Monti, D., Franz, C., Goehler, I. 1997. Constituents of Tagetes lucida Cav. ssp. lucida essential oil. Flavor & Fragrance, 12(1): 47-52.
Teucrium cyprium	Leaf	0	0	-0.4289453118130919	Arnold, N., Bellomaria, B., Valentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some Teucrium Species from Cyprus. J. Ethnopharm. 35: 105-113.
Teucrium divaricatum	Leaf	0	0	-0.4289453118130919	Arnold, N., Bellomaria, B., Valentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some Teucrium Species from Cyprus. J. Ethnopharm. 35: 105-113.
Teucrium gnaphalodes	Shoot	0	0	-0.5812940613351365	Perez-Alonso, M.J. Velasco-Negueruela, A. and Lopez-Saez, J.A. 1993. The Essential Oils of Two Iberian Teucrium Species. J. Ess. Oil Res. 5: 397-402.
Teucrium kotschyani	Leaf	0	0	-0.4289453118130919	Arnold, N., Bellomaria, B., Valentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some Teucrium Species from Cyprus. J. Ethnopharm. 35: 105-113.
Teucrium micropodioides	Leaf	255	255	-0.15115294138985622	Arnold, N., Bellomaria, B., Valentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some Teucrium Species from Cyprus. J. Ethnopharm. 35: 105-113.
Teucrium polium	Shoot	12	12	-0.5510000354800577	Perez-Alonso, M.J. Velasco-Negueruela, A. and Lopez-Saez, J.A. 1993. The Essential Oils of Two Iberian Teucrium Species. J. Ess. Oil Res. 5: 397-402.
Thymus capitatus	Plant	20	40	-0.5071363891495986	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Thymus capitatus</i>	Shoot	45	45	-0.4676914643785908	Biondi, D., Cianci, P., Geraci, C. and Ruberto, G. 1993. Antimicrobial Activity and Chemical Composition of Essential Oils from Sicilian Aromatic Plants. <i>Flav. &amp; Fragr. J.</i> 8: 331-7.
<i>Thymus funkii</i>	Shoot	0	0	-0.5812940613351365	Vila, R., et al. 1995. Composition and study of the variability of the essential oil of <i>Thymus funkii</i> Cousson. <i>Flav. &amp; Fragr. J.</i> 10(6): 379-383.
<i>Thymus funkii</i>	Shoot	--	--		Vila, R., et al. 1995. Composition and study of the variability of the essential oil of <i>Thymus funkii</i> Cousson. <i>Flav. &amp; Fragr. J.</i> 10(6): 379-383.
<i>Thymus longicaulis</i>	Shoot	345	345	0.28965918199838064	Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of <i>Thymus longicaulis</i> C. Presl subsp. <i>longicaulis</i> in the same Population. <i>J. Ess. Oil Res.</i> 5: 291-5.
<i>Thymus longicaulis</i>	Shoot	--	355	0.31490420354427967	Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of <i>Thymus longicaulis</i> C. Presl subsp. <i>longicaulis</i> in the same Population. <i>J. Ess. Oil Res.</i> 5: 291-5.
<i>Thymus longicaulis</i>	Shoot	--	345	0.28965918199838064	Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of <i>Thymus longicaulis</i> C. Presl subsp. <i>longicaulis</i> in the same Population. <i>J. Ess. Oil Res.</i> 5: 291-5.
<i>Thymus riatarum</i>	Shoot	575	575	0.8702946775540589	Iglesias, J., Vila, R., Canigueral, S., Bellakdhar, and Il Idrissi, A. 1991. Analysis of the Essential Oil of <i>Thymus riatarum</i> . <i>J. Ess. Oil Res.</i> 3: 43-4.
<i>Thymus serpyllum</i>	Plant	68	1012	3.141066351080252	--
<i>Thymus x citriodorus</i>	Plant	130	130	-0.16933983912831613	Stahl-Biskup, E. and Holthuijzen, J. 1995. Essential oil and glycosidally bound volatiles of lemon-scented thyme, <i>Thymus x citriodorus</i> (Pers.) Schreb. <i>Flav. &amp; Fragr. J.</i> 10: 225-229.
<i>Umbellularia californica</i>	Plant	10	40	-0.5071363891495986	--
<i>Valeriana officinalis</i>	Root	2	165	1.2460935416054946	--
<i>Valeriana officinalis</i>	Leaf Essent. Oil	6200	9000	-0.21732019637969832	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Zingiber officinale	Rhizome	5	3600	-1	--
Zingiber officinale	Rhizome Essent. Oil	25000	105100	1	--